chamber 1. The reactor chamber 1 is formed from a material capable of withstanding the temperature generated during the CVD process. In the present invention, the reactor chamber 1 is stainless steel and typically 8" in diameter. When the liquid precursor 5 enters the low pressure side of the liquid flow controller 7, it vaporizes to form a vapor precursor 5 comprising a mixture with the same molar composition as the liquid precursor 5. In addition to inlet 2, the reactor chamber 1 has an outlet 3 connected to a mechanical vacuum pump 13 through an automatically controlled throttle valve 14 to maintain constant pressure in the reaction chamber 1 throughout the deposition process and for circulating the vapor of the precursor 5 through the reactor chamber 1. The vapor precursor 5 is maintained at a pressure within the vacuum chamber 1 of between 1 mtorr and 250 torr, with the pressure being monitored by a pressure gauge (not shown).

IN THE CLAIMS

Please amend claims 1, 11 and 13 as follows:

1. (Twice Amended) A method of forming diamond crystals or a diamond film comprising

disposing a substrate in a reaction chamber;

introducing, in the absence of a gas stream, a liquid precursor substantially free of water and containing methanol and at least one carbon containing compound having a carbon to oxygen ratio greater than one into an inlet of the reaction chamber;

vaporizing the liquid precursor; and

subjecting the vaporized precursor to a plasma under conditions effective to disassociate the vaporized precursor and promote diamond growth on the substrate.

11. (Twice Amended) The method according to claim 10, wherein the electromagnetic energy is selected from direct current, radio waves and microwaves.